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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,308	10/31/2003	Liann-Be Chang	MR3029-31/DIV	9879

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SUITE 101
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ELLICOTT CITY, MD 21043

EXAMINER

TRAN, THANH Y

ART UNIT PAPER NUMBER

2822

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/697,308	Applicant(s) CHANG ET AL.	
	Examiner Thanh Y. Tran	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-25 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 17-25 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim (U.S. 4,999,310).

As to claim 17, Kim discloses in figures 3(A)-4(E) a structure of a LED device (“GaAs LED array structure”) (see col. 2, lines 38-44) comprising: a LED substrate (21) (substrate 21 of “GaAs LED array structure”) (see col. 2, lines 38-44 and col. 2, line 65) having an uppermost layer (28); and a transparent layer (24) having Zn dopants (“zinc diffusion region” 26) therein on the uppermost layer (28) of the LED substrate (21), wherein the transparent layer (24) is composed of a semiconductor compound (i.e. “GaAlAs” material, see col. 2, lines 53-55) different to that of the uppermost layer (28).

As to claim 18, Kim discloses in figures 3(A)-4(E) a structure of a LED device (“GaAs LED array structure”) (see col. 2, lines 38-44), wherein the transparent layer (24) is formed by LPE process (“Liquid Phase Epitaxy”) (see col. 2, line 61 – col. 3, line 6).

In addition, the limitation of “*said transparent layer is formed by LPE process*” is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

As to claim 19, the limitation of "*said transparent layer is formed by LPE process utilizing a supersaturated solution*" is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

As to claim 20, the limitation of "*an amount 1/1000 to 1/10 by weight of a solvent of a supersaturated solution in the LPE process*" is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

As to claim 21, the limitation of "*an amount 1/1000 to 1/10 by weight of Sb of the supersaturated solution in the LPE process*" is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S. 4,999,310) in view of Akaike et al (U.S. 2002/0036296).

As to claim 22, Kim discloses in figures 3(A)-4(E) a structure of a LED device ("GaAs LED array structure") (see col. 2, lines 38-44) comprising: a LED substrate (21) (substrate 21 of "GaAs LED array structure") (see col. 2, lines 38-44 and col. 2, line 65) having an uppermost

layer (28); and a non-GaP transparent layer (24) having Zn dopants ("zinc diffusion region" 26) therein on the uppermost layer (28).

The applicant should be noted that the limitation of "*the uppermost layer formed by a LPE process using a supersaturated solution*" is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

Kim does not disclose the uppermost layer is made of GaP material. Akaike et al discloses in figure 2C a structure of a LED device, wherein the uppermost layer (20) is made of GaP material (see paragraph [0038]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the structure of Kim by using GaP material for an uppermost layer as taught by Akaike et al in order to avoid the decrease in the brightness (see paragraph [0005] in Akaike et al).

As to claim 23, Kim discloses in figures 3(A)-4(E) a structure of a LED device ("GaAs LED array structure") (see col. 2, lines 38-44), wherein the non-transparent layer (24) is formed by LPE process ("Liquid Phase Epitaxy") (see col. 2, line 61 – col. 3, line 6).

In addition, the limitation of "*said transparent layer is formed by LPE process utilizing a supersaturated solution comprising metallic antimony (Sb) and indium (In) as a solvent*" is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

As to claim 24, the limitation of "*an amount 1/1000 to 1/10 by weight of a solvent of a supersaturated solution in the LPE process*" is a process limitation in a product claim, which

product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

As to claim 25, the limitation of "*an amount 1/1000 to 1/10 by weight of Sb of the supersaturated solution in the LPE process*" is a process limitation in a product claim, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

Response to Arguments

5. Applicant's arguments with respect to claims 22-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (571) 272-2110. The examiner can normally be reached on M-F (9-6:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TYT


AMIR ZARABIAN
PATENT EXAMINER
TECHNOLOGY CENTER